of steroids makes a full and objective assessment of the potentialities of hypnosis more rather than less urgent.

Summary and Conclusions

Six patients admitted to hospital with severe asthma were treated by hypnotic suggestion. Five were subsequently followed up for not less than one year.

Patients were assessed both by their subjective testament and objectively by spirometry: it was found that an adequate assessment could be based only on a combination of these methods. With this double assessment it was apparent that hypnosis benefited a patient in one of two entirely different ways—either by effecting physiological improvement (decrease of airways resistance) or by producing psychological improvement (decreased awareness of airways resistance). The distinction between these two responses has not often been adequately stressed. The implications of these findings for psychosomatic theory are discussed.

While in hospital one patient failed completely to respond to hypnosis, and one responded poorly. Four had subjectively complete remissions, but in only two of these was remission objectively complete. Immediate response to hypnosis (before and after sessions) was usually poor, but this could be explained by the content of the suggestion. Speed of remission could be as fast with hypnosis as with physical methods.

Three patients relapsed within days of going home, but two of these again went quickly into remission. Of the four patients originally responding well, two thought that their condition during the year after was much better than in previous years. Two out of these four patients were readmitted because of asthma.

These results cannot be interpreted as valid evidence for or against the value of hypnosis: an uncontrolled series of six patients can be regarded only as pilot study. The results do, however, strongly suggest that a controlled clinical trial of hypnosis would repay the effort. The particular value of hypnosis may be as an alternative to steroid treatment.

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A CASE OF CAT PHOBIA*

TREATMENT BY A METHOD DERIVED FROM EXPERIMENTAL PSYCHOLOGY

BY

H. L. FREEMAN,† M.A., B.M., B.Ch., D.P.M.

Formerly Registrar, Bethlem Royal and Maudsley Hospital, London

AND

D. C. KENDRICK, B.A., Ph.D., Dip.Psychol.

Lecturer in Psychology, Institute of Psychiatry, University of London

In recent years a new therapeutic technique—reciprocal inhibition (Wolpe, 1958)—derived from the field of experimental psychology has become available in psychiatry. The concept was originally introduced by Sherrington, and refers to situations in which the elicitation of one response causes a reduction in the strength of evocation of another, simultaneous response. When stimuli producing incompatible responses are present at the same time, the response that is stronger will cause the reciprocal inhibition of the other.

The aim of the technique is to make a response antagonistic to anxiety to occur in the presence of anxiety-evoking stimuli. There is a superimposition of non-anxiety responses to these stimuli, which tends to weaken the bonds between them and the anxiety responses, through lack of reinforcement.

Background

Research over the past thirty years into psychodynamically orientated therapy has generally been disappointing. Most of the findings have either been unreliable, in the sense that they have not been or could not be repeated, or have failed to provide any evidence of positive benefit. Glover (1955) has disavowed any claims for the therapeutic usefulness of psychoanalytic methods. However, there is an increasing quantity of material concerned with therapeutic techniques which have been derived from conditioning and learning theory, and claiming some success. Unfortunately, as yet, no controlled study has been attempted to compare the efficacy of any psychotherapeutic techniques against those of behaviour therapy. The techniques derived from learning theory have two main advantages over those derived from psychoanalytic theory: (*a*) they can be tested experimentally, and (*b*) under certain circumstances the behaviour disorders can be experimentally manipulated in a predictable manner (Yates, 1958).

The modern learning theorist considers that neurotic symptoms are learned patterns of behaviour (Eysenck, 1959) which are unadaptive in the social sense but designed to relieve anxiety in the individual. A phobic symptom probably represents a surplus conditioned

*Based on a paper read at the Annual Conference of the British Psychological Society, Hull, April, 1960.
†At present, Senior Registrar, Littlemore Hospital, Oxford.

response which in its original setting may have been relevant but is now unadaptive. In general, the strength of a habit depends upon the magnitude and the number of reinforcements of the response. However, traumatic single-trial learning is an instance of super-reinforcing conditions, and there is considerable experimental evidence to support the notion of one-trial learning (Hudson, 1950). On the other hand, subtraumatic pain and fear responses can also build up conditioned reactions more slowly (Solomon, Kamin, and Wynne, 1953). These unadaptive patterns of behaviour fail to extinguish themselves because the performance of the habits leads to their own reinforcement. This reinforcement can occur either by avoiding the situation—for example, a phobia—or by reducing anxiety in the situation—for example, a tic or obsessional ritual. Because neurotic symptoms are considered to be maladaptive behaviour patterns, the aim of behaviour-therapy technique is to retrain habits so that they again become adaptive patterns of behaviour. Treatment of the "unconscious" causes is disregarded in this type of therapy, which therefore rests on a different basis from the psychodynamic theories.

Behaviour therapy represents an alternative approach to the treatment of certain abnormal behaviour symptoms, but at this point in its development claims for its efficacy must not be overstated.

A person who developed neurotic symptoms once would almost certainly be predisposed to develop them again if the necessary environmental situation occurred. This is not symptom-substitution, but the reconditioning of old symptoms or the conditioning of new ones, in a situation in which anxiety is first produced and then reduced by the symptom.

The present case can be regarded as a model for illustrating a particular form of behaviour therapy.

Case Report

The patient, a married woman aged 37, was referred from an out-patient department to Dayholme, Bethlem Royal Hospital, because of a phobia for cats associated with tension, anxiety, and occasional depression. She had never previously seen a psychiatrist or had any treatment for the phobia, but was advised to seek help by a neighbour, who had been a mental nurse.

Family History

Her father died of coronary thrombosis in 1950, at the age of 53. He was a cable and wireless engineer—very rigid and meticulous; lacking in humour and overt affection. He was very strict with the children, dominated his wife, and made the family conform to his ideas. However, he never ill-used them physically. The patient says that he disapproved of all her friends and would steam open her letters. She was afraid of him as a child and felt that she never had any love for him. However, she never openly quarrelled with him or even answered him back.

Her mother is alive, aged 61. She is a simple, rather garrulous woman who is subject to "nerve rashes." She was prone to threaten her children in their earlier years with action by their father. After her husband's death she is said to have come into her own, having previously been dominated by him completely. She lives at present with her own mother, aged 92, and the patient's younger sister. The two latter get on badly, so that the home is not very happy. The patient and her mother have never been on terms of real confidence.

The patient is the eldest of three children.

Her brother, aged 36, is an insurance clerk, married with two children. He is said to be silent, morose, and henpecked. The patient has always been jealous of him, and considered that he was favoured by the parents in comparison with herself.

Her sister, aged 31, is partly deaf and was backward, but attended an ordinary school and was not abnormal in behaviour or appearance until the age of 14, when she developed epileptic fits. These continued until the age of 20, since when she has had no further fits, but has continued to take anticonvulsants. During adolescence she also developed a deformity of the back. She went out to do domestic work until six years ago, when she was knocked down by a car and has since remained at home, helping in the house. In recent years her behaviour has been very abnormal; she talks to herself loudly and has episodes in which she shakes and weeps, but is calmed down with hot milk. The patient was told by her mother that she attempted to abort this child and has therefore felt under an obligation to her ever since. The sister has apparently never had any specialist or hospital attention.

There is no other family history of nervous or mental illness.

Personal History

The patient was born in Lewisham in 1922. Birth and milestones were normal. She was considered to be a very handsome child, but was rather nervous and bit her nails, having a good deal of trouble with her father over this.

School.—She attended primary schools from the age of 5 to 11, being an average pupil and quite happy, but rather timid of the teachers. She then attempted the grammar-school scholarship and failed. Her father, however, was very ambitious for her and she went as a fee-payer, after passing the entrance examination. After a short time she felt quite out of her depth and came consistently bottom of the class, so that she eventually gave up trying. There were terrible scenes at home at the end of every term when her reports arrived, and her father would shout at her. She preferred the practical subjects and left at the age of 15.

Work.—On leaving school she became a clerk and remained in this work for the next four and a half years, having two different jobs. Then, largely to get away from home, she joined the W.R.N.S., in which she served for two years. She failed a course in gunnery control, which had a good deal of theory, but then became a control operator at a gunnery training school and did well in this work. She married during her service and was discharged when she became pregnant. In the last few years she has had part-time jobs as a cook in a café, a clerk for football pools, and, more recently, as a church verger.

The menstrual history shows nothing abnormal, except for some premenstrual tension.

Sexual.—She first had sexual relations with a boy friend at the age of 18, and this continued until their friendship was broken off. She had no premarital relations with her husband, but told him of her previous experience. Their sexual relations are said to be quite satisfactory and at present occur about fortnightly.

Marital.—The patient was married at the age of 22, having known her husband for four years. He was then in the Navy and has been a schoolteacher since the end of the war. He is about the same as the patient, and is a placid, easy-going, good-natured man. He has always been very concerned about the patient's symptoms and has done his best to protect her from cats. His personality is almost exactly the opposite of her father's. The engagement was bitterly opposed by the patient's family, and she states that she was "sent to Coventry" by them for several months. Her family had received an anonymous letter stating that her fiancé's father and four other members of his family had died of tuberculosis. The patient's father told her that if she married her fiancé, both of them, as well as any children they had, would die of tuberculosis also. He even went to the length of getting a copy of the death certificate of her fiancé's father from Somerset House, to try to convince her. However, he eventually realized that she was adamant about

her engagement and then completely reversed his attitude, making her fiancé very welcome.

Friends.—The patient had several boy friends before her engagement, and forms social relationships easily.

Children.—The patient has two children—a daughter aged 14 and a son aged 12. They are both healthy and get on well together. Like her husband, they have done a good deal to protect her from cats.

Medical History

The patient had scarlet fever at the age of 16, after a sinus operation at Gray's Inn Road Hospital. Her father told her, when she applied to join the W.R.N.S., that she would not be accepted, because she probably had a bad heart as a result of this.

The only other condition of note is paraesthesiae in the hands. This first occurred 12 years ago and again three years ago, clearing up on both occasions with tablets from her doctor. It recurred in July, 1958, and she was seen in October by a physician at St. Helier Hospital. He diagnosed carpal-tunnel compression, and during the next few months she had hydrocortisone injections into both wrists, followed by cortisone tablets. Her symptoms resolved completely during the past summer, but are now present again minimally.

Personality.—The patient's personality is sociable and outgoing. She has many friends and likes to be active, both in the home and at evening classes. She is rather house-proud, and this had been excessive in the last year or so. She is sensitive, easily irritable, and readily shows her feelings. She is fond of all animals except cats; her children have guinea-pigs, a tortoise, and a bird, none of which upsets her. For some years she has had occasional episodes of depression, lasting for a day, which would sometimes follow fright from seeing a cat. However, these have been very infrequent.

Present Illness

The patient states that her fear of cats has existed for as long as she can remember. The earliest incident she can recall is at the age of 4, when her father drowned a kitten in a bucket in front of her. Her mother has no recollection of this incident, and the patient says that her parents did not take this fear very seriously. She remembers sitting at the table with her legs held straight out in front of her if the cat was prowling about the floor, and screaming outside the front door of the house if there was a cat on the step.

When she was 14 her parents, for some reason which is not clear, put a fur inside her bed on one occasion. She states that she became quite hysterical on finding it. Her mother states that at the age of 18 the patient had another fright when a cat got ino her bedroom, but the patient has forgotten this.

During her time in the W.R.N.S. she was often frightened by cats, and always insisted on sleeping in a top bunk, though she did not tell anyone of her fear.

Her mother says that her fear became worse after the age of 22, when she was married and went to live in a rather dark and depressing house. However, it does not seem to have been affected by the move to her present house, a few years later. There then seems to have been a period of almost 10 years, including the time of her father's death, in which the phobia remained unchanged.

However, during the last year or two, and particularly in the six months before coming to Dayholme, the fear became steadily worse. In this last period the house next door had been empty; the grass in the garden grew very long and it became a rendezvous for all the local cats. The patient said that she was terrified by the thought that cats would spring on her and attack her. She knew that this was very unlikely in fact, but could not rid herself of the fear. At the sight of a cat she would panic and sometimes be completely overwhelmed with terror. She always walked on the roadside edge of the pavement, to avoid cats on the walls, and would never go out alone at night.

She would not, if she could possibly help it, go into any room where there was a cat. On visiting friends or relatives who had a cat, her husband or children would usually enter ahead of her, to see that the cat was turned out. She was afraid to go into her garden alone, and washdays were a torment to her. She could not bear to touch any cat-like fur or wear fur gloves, and felt uneasy sitting next to anyone wearing a fur coat on public transport. Pictures of cats in books, or on television or the cinema made her feel uneasy. In recent months her life was filled with fear of cats, and she could think of nothing else. She interpreted any unexpected movement, shadow, or noise as due to a cat. She would be upset by her daughter's toy koala bear if she saw it or touched it unexpectedly.

On waking in the morning her first thought was how many cats she would meet during the day. It was as a result of this, she felt, that she would work up a fury of activity in the house and never sit still. From time to time she had terrifying nightmares, concerned with cats.

The details of her illness were confirmed by her husband.

Mental State

On admission to Dayholme she was found to be a woman of rather immature manner who was readily emotional. She spoke freely and gave a detailed account of herself. She was rather tense, and wept when describing her experiences with cats. There were no other features of depression or of a compulsive nature, and she had a very strong motivation towards cure.

She settled at Dayholme and established good relations with staff and patients. She was rather anxious, however, about cats in the grounds. Physical examination was normal, except for a slightly elevated blood-pressure and some cyanosis of the extremities, which the patient said was usual for her.

Special investigations were all normal. Her I.Q. was 112 on Raven's progressive matrices. The Maudsley personality inventory showed a mild degree of extraversion.

Method

The patient was referred to the psychologist as possibly being suitable for behaviour therapy. She was interviewed by him to determine which stimuli produced the fear reaction; this revealed a number of them which showed a clearly defined stimulus-generalization gradient. This refers to the fact that an animal or person conditioned to one stimulus also responds, though less and less strongly, to stimuli further and further removed from the original one. The stimuli producing the fear reaction, in descending order of significance, were as follows: (1) the sight of a cat in reality; (2) the thought that a cat might be about to spring out on her while she was walking along the pavement; (3) the thought of going out by herself at night in case she should meet a cat in the dark; (4) pictures of cats, and cats on television; (5) cat-like toys; (6) cat-like fur. She was *not afraid* of cats' mewing.

These stimuli produced the following behaviour disorders, of which the patient complained: (1) panic at the sight of a cat; (2) she walked along the roadside edge of the pavement; (3) she could not go out alone at night; (4) she could not go into a room where a cat was, even though it was under control; (5) she was uneasy when she had to go into her garden alone, and hanging out the washing was a torment to her; (6) she would be startled by a toy koala bear, belonging to her daughter, if she came upon it unexpectedly; (7) she could not wear fur gloves; (8) she felt uneasy when somebody sat beside her in a fur coat on public transport; (9) she could not bear to touch cat-like fur, though she could quite easily touch the hair of a dog or other similar animal.

The case report has referred to the situations in which she was frightened by the sight of her father drowning a kitten at the age of 4, and by discovering a fur in her bed at the age of 14.

Thus, not only did the patient's fear reactions show a stimulus generalization, but also she had undergone two traumatic experiences, concerned with cats and fur, which could have been the conditioning situations for the phobic symptoms. The system of disabilities, therefore, is accountable in learning-theory terms—that is, two super-reinforcing conditions—and the stimulus-generalization gradient.

The form of behaviour therapy considered by the psychologist to be relevant to this case was reciprocal inhibition.

A strong sympathetic reaction has to be overcome by a stronger parasympathetic one. To do this, use is made of the concept of stimulus generalization—that is, attempting to establish a new response at the end of the gradient, where the fear reaction is weakest and where there are competing responses. If the fear response at this point can be overcome, then stimulus generalization works in our favour. A generalization occurs to other stimuli nearer the main stimulus, and so it becomes easier for us to establish the new response to the stimuli producing the stronger anxiety reactions.

Plan of Treatment

The patient was strongly motivated to get better, and therefore any improvement she experienced was highly rewarding to her, with relief of anxiety.

It was considered that the weakest point of the stimulus gradient would be material that had some of the texture of fur without looking like it—for example, velvet. A series of pieces of material would have to be prepared, graded in texture and appearance from most unlike cat fur to very like cat fur (rabbit). The patient would then have to handle these materials (in order of similarity to cat fur), and before she proceeded with the next piece in the series she would have to be quite sure that she felt no uneasiness whatsoever in handling it. After overcoming the fear reactions to handling cat-like fur, she was to be presented with a toy kitten, and with pictures of cats, which she was to become accustomed to, until they caused no anxiety. Once this state was achieved she was to be shown a live kitten, and gradually to approach and touch it. When she was quite prepared she was to take it home and keep it. As it grew, so the generalization to large cats would occur and, finally, she would be free from her phobia for cats.

The use of a kitten is similar to the method reported by Jersild and Holmes (1935) for treating a child's fear of dogs through a puppy. The puppy is sufficiently unlike a grown dog to elicit the fear to only a small degree, while its antics create pleasurable responses. As it grows, these responses spread to all dogs.

Treatment

At his interview with the patient the psychologist outlined the programme he had formulated and gave the eventual aim as being that she should be able to touch a fully grown cat without distress. The patient felt that the method seemed reasonable to her, but was very sceptical about the outcome; she could not conceive of herself as ever being able to touch even a kitten.

The psychiatrist then began the presentation of stimuli at the day hospital, and told the patient to handle each material in turn, until it caused her no uneasiness. When a glove made of rabbit fur was eventually offered the patient was so upset by it that she wrapped it up in a newspaper. However, another patient encouraged her by putting the glove on himself and persuading her to stroke it. Within a few days it had ceased to cause her any unpleasant feelings.

The patient's intelligent co-operation in the procedure was illustrated by her experience with pictures of cats. When this point was reached she was advised to obtain some large pictures and put them up at home. She was a little overenthusiastic, and arranged nine in different parts of the house, particularly in corners where they would surprise her. This proved rather distressing for her and she had to take down some of the more frightening ones, but in the course of the next week or so she became used to all of them.

At the end of three weeks, fur, toys, and pictures had all been fully assimilated and a significant lessening in anxiety had already occurred. She was much less preoccupied with cats in general and her family had noticed that she was altogether more cheerful. She could walk within about 10 yards of a cat without flinching, and when opening the curtains in the mornings her first reaction was no longer to look round the garden for cats.

The rapidity of response so far seemed remarkable, and the patient now felt ready to deal with a live kitten. One of a suitably placid disposition was obtained and the patient was brought into the room, where she saw it resting on the lap of one of the nurses. She sat down next to the nurse, stroked the kitten herself, and then took it on to her own lap. During this process she became very emotional, both laughing and crying, but this passed off in a few minutes, and she explained afterwards that it was not from distress, but from relief at having done something of which she imagined herself incapable. She later described this as " one of the greatest days of my life."

In the next two days she looked after the kitten at the day hospital and then took it home, where it has remained since. This occurred one month after her first attendance, and during the next two months she continued to attend twice weekly, but mainly for the art classes, in which she was very interested. During this time she was assessed weekly by the psychiatrist, and her improvement was seen to be continuing. She said that she felt as though a cloud had been lifted from her, and she had stopped biting her nails for the first time in her life.

One month after taking the kitten home she had her second interview with the psychologist. She stated that she no longer walked along the edge of the pavement, and could wear fur gloves and sit next to people in fur coats without feeling uneasy. She was no longer upset by pictures or films of cats and could consider some of them as beautiful creatures. She could pass near to a full-grown cat without panicking, and felt she would be able to go out alone at night, but her family had not let her try so far. She had stopped having cat nightmares; however, she dreamed without distress of kittens and later of full-grown cats.

On two successive nights the following week she had aggressive dreams concerned with her father and was very miserable in the intervening day. In one dream she was murdering her father with a poker. In recounting these she stated that she had often had feelings of this sort when her father was alive, but had not allowed herself to express any hostility against him.

Ten weeks after beginning treatment she touched a full-grown cat for the first time. She was so thrilled by this that she felt like running down the street and telling everyone and then was reluctant to wash her hands afterwards. She then touched her mother's black cat, though cats of this colour had been the ones which previously frightened her most. Whereas previously all cats had an almost uniformly sinister aspect, she could now see individual differences.

After three months she discontinued attendance at the day hospital, but came to report progress to the psychiatrist at intervals of three weeks, lengthening to one month. She states that her life has been completely transformed, and that she no longer goes round in a state of fear. Nor does she feel the need any longer to occupy herself in constant activity inside the house to relieve her anxiety. The kitten has grown considerably, and she has no difficulty in dealing with it. At the end of the fifth month from beginning treatment she had been out by herself at night, even in dimly lit streets. The only episode which caused her any distress was going into the back garden at night on her own. At the end of the eighth month (and two months after the previous interview) she remained well, except for a brief relapse, which followed her cat being involved in a fight with another one. She then realized

that she was afraid of only one particular cat, and there was no generalization in this episode.

Throughout the treatment both direct suggestion and reassurance have been avoided. Interviews, both by the psychologist and by the psychiatrist, have been confined to explaining the procedure, administering the stimuli, and assessing the position reached.

Psychological Discussion

Considering the case from the viewpoint of learning theory, several behavioural changes deserve comment. The reduction of the stimulus-generalization gradient of the fear responses is clearly shown by the progressive remission of symptoms, which never required direct treatment. The most striking example is that of the patient's reversion to walking in the middle of the pavement rather than on the roadside edge, while another example is that of her becoming able to discriminate between cats aesthetically.

A dramatic feature of the case was the dream sequence; this also could be explained by the mechanism of the reduction of the stimulus-generalization gradient. She was able to accept larger and larger cats in her dreams with severe anxiety (nightmares), until finally, when her conscious fear of cats had almost disappeared, the original unconditioned stimulus for the fear responses (her father) appeared, and then disappeared. This event almost coincided with the termination of the treatment. This is not to quarrel with psychodynamic interpretations of the dream sequence, but only to point out that it followed a pattern which would be consistent with a learning-theory mechanism. Why the dream sequence occurred is another matter.

So far, the discussion has been concerned with the remission of the maladaptive habits, but another feature of the case was the patient's diminished irritability and general anxiety. Having started to break through the vicious circle of the phobic reactions, we not only get a remission of the behavioural symptoms, but also a reduction in the general anxiety level. The phobic response can be regarded as functionally autonomous—that is, self-stimulating and self-rewarding. The sight of a cat produces fear; this leads to an avoidance response, and the avoidance response to a reduction of fear, which rewards the avoidance response. At the same time general anxiety is produced in the patient by her knowledge of how her behaviour is distorted because of her fear, and how disrupting to normal behaviour these avoidance responses are. Having broken part of this chain of events, it is not surprising that we get a lowering of general anxiety. This was clearly shown in the patient by the reduction in her anxiety-avoidance activity in the home, and by the cessation of nail-biting, two symptoms which were never treated or even discussed by the therapists with the patient.

Finally, the patient was extremely eager to get well and was very co-operative, so that the slightest reduction in her symptoms was highly rewarding to her. Had the patient not been so co-operative, the treatment would probably have not proceeded so smoothly and rapidly. Instead of getting positive reinforcement, which quickly developed positive habits, antagonistic to the ones we wished to remit, we might then have had to proceed by massing practice of the maladaptive habits in the first instance. This would have produced a negative habit, antagonistic to the maladaptive ones (Kendrick, 1958; Yates, 1958).

Clinical

It is appreciated that this report is likely to be criticized as describing a single case, followed up over a very short period. Nevertheless, we felt it merits attention in view of the extremely rapid resolution of symptoms which had been present to some exent for about 30 years, and which did not seem likely to respond to the conventional methods of treatment. It is also appreciated that the treatment situation and subsequent course of events can be interpreted in terms other than those of learning theory. During the crucial stage of the treatment the patient was attending the day hospital and benefiting from its activities and social support. While we would not wish to underestimate these factors, our experience does not suggest that phobic symptoms in general are likely to resolve in the day-hospital situation without other specific treatment. Nor can it be maintained that the phobia was replaced by a dependence on the day hospital, since there was no return of symptoms when the patient ceased attending.

In the era of the National Health Service it may be considered surprising that a disturbance of this severity should remain for so many years without any reference for treatment. However, neurotic conditions which do not include definite somatic symptoms tend not to be regarded as "illness" meriting the attention of doctors, but rather as personal peculiarities. The difference in many cases may be one of degree—for example, in this country a fear of snakes is unlikely to assume the importance of a phobia. However, fear of cats appears to be relatively common and was the subject of a recent discussion on the B.B.C.'s programme, Woman's Hour. In the end it was the intervention of a friend which resulted in this patient seeking medical help.

It may also be objected that a patient who had endured symptoms for so many years without help would have responded to any therapeutic measure—particularly to any one involving personal attention and a specially designed programme, such as the treatment given. This assumes that the relief of symptoms is to be attributed entirely to suggestion. We would not deny that suggestion played some part in the cure, in spite of the efforts made to avoid direct suggestion during interviews. However, we believe that methods involving suggestion alone would not be expected to produce such a dramatic resolution of long-standing symptoms.

So far as the patient's relationship to the two therapists is concerned, general observation suggested that she had strongly positive feelings towards both, but discussion of this aspect was avoided during interviews. It is possible to offer a number of psychodynamic explanations, in terms of transference, to account for relief of symptoms—for example, that the therapists benefited from positive feelings which had been inhibited from expression towards the father. In this connexion it would have been very interesting to observe the result if the patient had been treated by female therapists. However, we do not feel that such concepts necessarily invalidate the learning-theory aspect of this case, and Jones (1960) has pointed out that the concept of transference might well fit into its conceptual framework. The therapist would presumably lie along the stimulus-generalization continuum, derived from other significant males.

Summary

The successful remission of symptoms connected with a cat phobia, by a technique derived from experimental

psychology, is described. An argument is developed for using learning theory and behaviour therapy as an alternative approach to psychotherapy in the treatment of certain psychiatric symptoms.

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DIFFERENT HAEMOSTATIC DEFECTS IN ONE FAMILY

BY

F. NOUR-ELDIN,* Ph.D., M.B., L.S.A.

Late Research Fellow in Haemophilia, United Manchester Hospitals

Haemostasis is a complex process in which the coagulation of blood as well as the walls of the vessels participate. Haemorrhagic diatheses are therefore apt to occur as a result of defects in the blood-clotting mechanism and/or anomalies of the anatomical construction or the physiological response of the vessel wall. In spite of the multiplicity of the possible causes of defective haemostasis, the various members of a particular family are usually found to have the same anomaly, even when this comprises more than one factor. Few exceptions have been previously recorded: Verstraete and Vandenbroucke (1955) found one member of a known haemophilic family to have combined antihaemophilic globulin and Christmas factor deficiency, and Bell and Alton (1955) reported a family in whom both sexes showed deficiency of factor VII, while some of the males were thought to suffer from Christmas disease as well.

The present paper describes a family in whom four different haemostatic defects have been demonstrated in three generations.

The Family

The family tree is shown in Fig. 1. The relevant clinical features are as follows.

II 1. This patient did not recollect any bleeding diathesis in his ancestors, but one of his two brothers complained of swellings in the joints, and died aged 45 as a result of suffocation by a haemorrhage in the pharynx and floor of the mouth. None of his five sisters has been affected. He married twice; both wives were healthy and showed no signs or symptoms of a bleeding tendency. There are two sons and one daughter of the first marriage and three daughters of the second. The patient was first seen in 1956, aged 59, complaining of haemorrhage under the tongue. Since childhood he had suffered from repeated attacks of epistaxis, which remained the only complaint until he was 14. From that age he bruised easily after minor trauma. Spontaneous haemarthrosis of the elbows also became a frequent manifestation. Restriction of their movement was specially apparent after a knock on the right joint. After an injection in the right arm, the septic haematoma which developed caused contraction of the skin and wastage of muscles. Haematuria for three days occurred only once, at the age of 51. No history of melaena or haematemesis could be elicited. The bleeding which followed the extraction of his remaining 15 teeth, at the age of 36, necessitated his admission to hospital. In spite of his having been transfused with two bottles of blood, slight bleeding continued for a month. A year later he slipped in the bath and developed an extensive haematoma in the muscles of the anterior abdominal wall and retroperitoneal tissues. His condition quickly improved after receiving one bottle (540 ml.) of fresh blood daily for four consecutive days. At the age of 61 he again developed a sudden haemorrhage in the floor of the mouth during his sleep, and died before his doctor was able to see him.

II 2. The second wife of II 1 enjoyed perfect health. Nevertheless, her blood-clotting mechanism was examined; no abnormality was detected.

III 1. Particulars regarding a daughter aged 35 of II 1 by his first marriage were obtained from her father, and some clinical information was supplied by Dr. E. K. Blackburn. She gave a history of excessive bruising and occasional purpuric rash, but did not consider her bleeding from cuts abnormal. Teeth extractions, however, were always followed by a slight oozing of blood for a period of two days. Specks of blood in the sputum were noticeable when she had attacks of bronchitis. A transfusion of six bottles of blood were required after the removal of a fallopian tube nine years previously. One of her daughters (IV 3) is easily bruised and bleeds excessively after cuts or teeth extractions. Both the mother and daughter were found to have a capillary defect, as evidenced by capillary microscopy. The mother, in addition, had a slight deficiency of antihaemophilic globulin.

III 2. This patient, the eldest (23 years) daughter of II 1 by his second marriage, complained of easy bruising, occasional epistaxis, and heavy periods lasting seven days. Her only pregnancy at 21 years of age was, however, normal and the childbirth uncomplicated. At the age of 10 she had two teeth extracted; the severe bleeding which ensued was not controlled until the sockets had been plugged five hours later. This bleeding occurred again after the extraction of another two teeth when she was 18. A course of vitamin K for one month prior to the removal of one tooth at the age of 20 did not prevent a similar excessive bleeding.

III 3. The second daughter (aged 13) had an uneventful tonsillectomy five years previously. Nevertheless, her blood-clotting mechanism was investigated. The only finding of interest was a concentration of antihaemophilic globulin slightly below the lowest level of the normal range.

III 4. The youngest daughter (aged 8) gave a history of repeated attacks of epistaxis which had ceased for the last

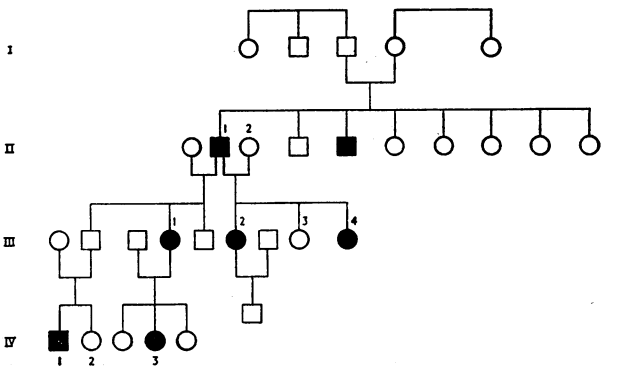

FIG. 1.—Family tree. The following members were found to have: II 1, haemophilia; III 1 and 2, combined A.H.G. deficiency and capillary defect; III 3, slight deficiency of A.H.G.; III 4, factor VII deficiency; IV 1 and 3 capillary defect; and II 2 and IV 2, no abnormality.

*Now at the Blood Transfusion Centre, Crescent Drive, Brentwood, Essex.